REMARKS

This is in response to the Official Action mailed July 17, 2002, in which claims 1-10 and 17-38 were rejected and claims 11-16 were objected to. A petition for a one-month extension of time, extending the time for response from October 17, 2002 to and including November 17, 2002, is enclosed herewith. Please note that November 17, 2002 was a Sunday. In addition, formal drawings are enclosed with this response.

The Official Action states that claims 11-16 would be allowable if rewritten in independent form. The examiner's indication that claims 11-16 are directed to allowable subject matter is greatly appreciated by the Applicants.

In the Official Action, claims 18 and 19 were rejected under 35 U.S.C. § 112, first paragraph. The Official Action states that the present application does not adequately describe why both ends of the leads are attached to the same assembly structure, and how one end is detached without detaching the other end. The present application incorporates by reference U.S. Patent No. 5,518,964 ("the '964 patent"), among others. See para. 50 of the present specification. The '964 patent, in certain embodiments, discloses a method of making a plurality of semiconductor chip assemblies, including making a component having a dielectric layer and a plurality of leads. See Fig. 10. In making the leads, copper is removed from underneath the leads so that the leads are separated from the dielectric layer by a gap 78. A small copper button 80 is disposed at a tip end of the lead and a larger copper button 82 is disposed at an opposite end of the lead. See Fig. 9 and col. 9, ln. 61-col. 10, ln. 40.

The component is assembled with a semiconductor wafer having semiconductor chips and contacts on a top surface. Col. 11, lns. 13-22. Bonding material 72 on tip ends of the

leads is used to bond the tip ends of the leads to the contacts. Col. 12, lns. 25-29. Then, the wafer and the component are moved with respect to one another, bending the leads, and detaching the tip ends of the leads from the dielectric layer of the component. Col. 13, lns. 5-66. An encapsulant is disposed between the wafer and component and the component is diced into individual assemblies having a chip. Col. 14, lns. 17-21; col. 15, lns. 4-12.

The other applications and patents incorporated by reference describe other ways of making and using leads having a firmly secured end and a detachable or releasable end. Thus, Applicants assert that the subject matter of claims 18 and 19 are adequately enabled by the present application. Thus, claims 18 and 19 are allowable.

Claims 1-10, 17, 20-34 and 36-38 were rejected under 35 U.S.C. § 102 (b) as being anticipated by *Kovac, et al.*, U.S. Patent No. 5,695,952 ("*Kovac*"). It is stated in the Official Action that *Kovac* discloses a first side assembly, a second side assembly, compressing resilient elements and then releasing the resilient elements so that the assemblies are moved with respect to one another and the leads are deformed.

Claim 1 requires a resilient element between a first side assembly and a second side assembly, compressing the resilient element and at least partially releasing the resilient element so that the resilient element expands and the leads are deformed. For example, the present application describes an embodiment in which a first side assembly comprising a carrier frame is assembled with a second side assembly comprising a dielectric layer with electrically conductive features. The carrier frame has an aperture for receiving a microelectronic element. See the present application, paras. 44-48. The electrically conductive features include leads having one end permanently attached to the dielectric layer and another end

releasably attached to the dielectric layer. *See* paras. 48-50. The carrier frame is arranged with the dielectric layer so that the leads face the aperture in the carrier frame. A first resilient element is interposed between the carrier frame and the dielectric layer. See paras. 52-55. A microelectronic element having contacts is disposed in the aperture of the first side assembly. The contacts are bonded to the releasable ends of the leads. See Paras. 56-57. A structure, which may comprise a heat spreader, is disposed over the first side assembly. A second resilient element is interposed between the heat spreader and the carrier frame. The heat spreader has adhesive aligned with the microelectronic element disposed in the aperture of the carrier frame. See Paras. 59-60; Fig. 5. A compressive force is applied to the heat spreader, compressing the second resilient element so that the adhesive adheres to the microelectronic element. When the compressive force is removed, the second resilient element expands so that the microelectronic element moves upwardly with the heat spreader. As the microelectronic element moves, the releasable ends of the leads are released from the dielectric layer, and the releasable ends of the leads move upwardly with the microelectronic element, deforming the leads. *See* Paras. 62-64; Figs. 7 and 8.

Kovac discloses attaching a plurality of compliant pads 110 to the first surface of a film 100. A semiconductor chip 120 is then assembled with the film 100 and compliant pads 110. Heat and pressure is utilized to adhere the compliant pads to the semiconductor chip 120. The contacts 130 on the chip 120 are attached to terminals 140 on the film 100 using any suitable means. Such connections may be made utilizing a flexible lead 150. *Kovac* discloses bonding the leads to the contacts utilizing a bonding tool advanced into a bond window to engage each lead and connect it to a contact on the chip. (*See* col. 7, ln. 37 to col. 8, ln. 39.) A compliant filler 170 is then

introduced between the chip 120 and the dielectric film 100. *Kovac* does not teach or disclose utilizing the expansion of a resilient element to deform leads. The Official Action states that *Kovac* discloses a first side assembly having a frame and refers to Fig. 5A and col. 7 of *Kovac*. However, Fig. 5A shows a tape 200 having bond windows 215 and leads 225 extending across the bond window 215. The tape 200 is assembled with the microelectronic element, whereas claim 1 requires a first side assembly and a second side assembly. Claims 2-10, 17, 20-34, and 36-38 depend directly or indirectly on claim 1. Thus, claims 1-10, 17, 20-34, and 36-38 are unanticipated by *Kovac* and otherwise allowable.

Claim 35 is rejected under 35 U.S.C. § 103(a) as being unpatentable over *Kovac* in view of *Khandros, et al.*, U.S. Patent No. 5,848,467 ("*Khandros*"). Claim 35 requires that the leads comprise copper, gold and alloys thereof. *Khandros* is cited for leads made from materials that are flexible and easily bendable. Claim 35 depends directly from claim 1. As discussed above in connection with claim 1, *Kovac* does not teach or disclose at least partially releasing the compressive force applied to the resilient element to deform the leads. Thus, claim 35 is patentable over *Kovac* in view of *Khandros* for the reasons discussed above.

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Respectfully submitted,

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